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NOTES ON ARIZONA BIRDS

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INTRODUCTION

This paper provides supplemental information to the excellent book on Arizona birds by Phillips, Marshall, and Monson (1964) and is based primarily on material collected in the first quarter of this century. This early information is important not only in the usual sense of distribution, taxonomy, etc., but also in helping to complete the historical record of Arizona ornithology. In view of the many known and suspected changes in status of Southwestern birds (e.g., Phillips, 1968), it is desirable to place in print all data that contribute to the accuracy and completeness of the record. Most of the specimens and other data cited here were amassed by the late J. Eugene Law, whose major interest in Arizona was centered on the Chiricahua Mountains. Law worked in those mountains at several different times, including April 1913, May through September 1919, and June through July 1921. He was also aided by several others, including Frank Hands, a long-time resident of the Chiricahuas; Adriaan J. van Rossem, employed to collect from October 1914 through June 1915; and Donald D. McLean, who accompanied Law in 1921. Law also obtained specimens from elsewhere in Arizona, including a small collection taken by Mortimer Jesurun in August and September 1916 from the poorly collected Chemehuevis (=Mohave) Mountains.

From the time of his death in 1931 until 1962, Law's holdings were housed at the Museum of Vertebrate Zoology, after which they were incorporated into the Bailey-Law Collection. The entire collection has been donated to the Virginia Polytechnic Institute and State University, Blacksburg, Virginia, and includes not only Law's bird skins but his field notebooks and other papers as well. While not containing a great deal of quantitative ecological information, Law's notes on Arizona localities, animals, and habitats are valuable and interesting documents. These notes are referred to frequently in the species accounts that follow and are indicated in this paper by "(ms)."

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Throughout the paper I have used Law's original catalog numbers, these being prefixed by "JEL." Other citations used are as follows: HHB—Harold H. Bailey; CNH—Cincinnati Museum of Natural History; DM—Delaware Museum of Natural History; MVZ—Museum of Vertebrate Zoology; PA—Academy of Natural Sciences of Philadelphia. US—National Museum of Natural History; UM—University of Michigan Museum of Zoology. Some of the material in the Bailey-Law Collection has now been deposited in these museums, and such transfers are appropriately indicated.

In keeping with the meticulous attention to Arizona birds shown by Phillips et al. (1964), I have included in this paper information of minor as well as of major importance and interest. The desire for completeness and the need to place data on the published record outweigh the added length brought about by this approach. One source of commentary in this paper is on maps in Phillips et al. (1964), to which a number of additions can be made. I am informed by Allan Phillips (*in litt.*) that some of the maps were altered from the originals in the publication process, and as a result some of the gaps are more apparent than real. However, as most readers cannot readily distinguish between what is shown and what was intended, I have treated all cases for which I have supplemental data.

In general, taxonomy and sequence follow the A. O. U. Check-list (1957). Measurements are in millimeters (mm.), with wing length being the chord. Elevations are given in feet, in keeping with original notations on labels. To avoid repetition, several frequently mentioned localities can be located precisely as follows:

BARFOOT PARK—in the Chiricahua Mountains, about 8 miles due west of the village of Portal. Elevations 8000 feet and higher.

BONITA CANYON—in the Chiricahua Mountains on the northwest slope; at its head about 15 miles west and 5.5 miles north of Portal. Elevations up to 5500 feet.

CHIRICAHUA MOUNTAINS—in extreme central-eastern Cochise County, in southeastern Arizona. Elevations up to about 9800 feet.

DOS CABEZAS—in central-northern Cochise County, about 15 road miles east-southeast of Willcox, on Arizona Route 186.

LIGHT—a settlement west of the Chiricahua Mountains, about 20 miles due west of Portal. Elevation 4500 feet.

MOHAVE MOUNTAINS—in extreme southern Mohave County, between the Colorado and Big Sandy Rivers; called the Chemehuevis Mountains by Jesurun in 1916. Elevations up to 5300 feet.

PINERY CANYON—in the Chiricahua Mountains on the northwest slope; at its head about 7 miles west and 0.5 miles north of Portal. Elevations 5000 feet and higher.

RUSTLER PARK—in the Chiricahua Mountains about 1 mile south of Barfoot Park. Elevations 8000 feet and higher.

WILLCOX—in central-northern Cochise County on Arizona Route 86.

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ANNOTATED LIST OF SPECIES

Double-crested Cormorant: *Phalacrocorax auritus* (Lesson). Phillips et al. (1964) surmise that the race occurring in Arizona should be *albociliatus* Ridgway, but they had seen no material to verify this. Two white-plumed specimens of this race were taken 2 miles north of Light by van Rossem: adult female, 20 May 1915 (JEL 3898); subadult male, 27 May 1915 (JEL 3897). (JEL 3898 is now in US collection.)

Goshawk: *Accipiter gentilis* (Linnaeus). Goshawks breeding in the Chiricahua Mountains and southward were separated by van Rossem (1938) as *A. g. apache*, which was described as larger than more northern birds, with darker upperparts in adults and darker and broader ventral streaking in immatures. Although not recognized by most workers, this race is accepted as valid by Phillips et al. (1964), and its range is extended to the nearby Huachuca and Santa Catalina Mountains. This acceptance is supported by my investigations, which suggest that at least on the basis of wing length *A. g. apache* is distinct from Goshawks of most of the remainder of North America.

Wing lengths of 31 Goshawks from probable breeding grounds or areas of residency are shown in Table 1. From these data it is apparent that the adult female that served as the type of *A. g. apache* is very long winged, exceeding the closest value from elsewhere in North America (the Yukon, in this case) by 28 mm. The wing measurements of the two immature female *A. g. apache* exceed those of the next largest

Table 1: Wing Lengths (in mm.) of Breeding and Resident Goshawks of North America

AREA	MALES		FEMALES	
	<i>Adult</i>	<i>Immature</i>	<i>Adult</i>	<i>Immature</i>
Southeastern Arizona	344 ¹	332 ²	*390 ¹	365 ¹ , 368
Northern New Mexico and central Arizona	335	none	none	341, 351
More northern North America	320-325 (7)	305-325 (5)	340-362 (9)	345, 347

¹ Measured by van Rossem (1938)

² Measured by D. M. Niles

* Type of *Accipiter gentilis apache* van Rossem

bird (from northern New Mexico) by 14 and 17 mm. and are greater than those of the largest more northern bird (from Labrador) by 17 and 21 mm. Of the two adult male *A. g. apache*, the larger is 9 mm. longer winged than the next largest bird (again from northern New Mexico), but the smaller is 3 mm. shorter than the latter. However, when compared to more northern specimens, the two *A. g. apache* both prove longer winged, being 19 and 7 mm. longer than the longest (a bird from Idaho). These data, although based on small samples, show that *A. g. apache* averages longer winged than more northern Goshawks, although approached by some birds in northern New Mexico and probably elsewhere in the Southwest. Additional specimens, all nonbreeding adult females, that are intermediate toward *A. g. apache* are the following from southwestern New Mexico: Reserve, Catron County, 11 October 1927 (UM 121501), wing 378 mm.; Black Range, Grant County, 2 December 1917 (CNH 6), wing 371 mm.; Pinos Altos Mountains, Grant County, 10 December 1926 (CNH 7), wing 370 mm.

Color comparisons could not be generally undertaken, except with material in the Bailey-Law Collection. The only summer *A. g. apache* in the collection is an immature female from Pinery Canyon, in the Chiricahua Mountains: 21 June 1921 (JEL 6824), wing 368 mm. Compared to a series of five immatures from northeastern North America, this specimen is generally darker above, especially on the crown; but the character of the ventral streaking is not notably different from certain of the northeastern birds. The same assessment of color characters applies to four other immature Chiricahua specimens, identified as *A. g. apache* on the basis of long wings: female, 22 October 1914 (JEL 2861), wing 368 mm.; probable female, autumn 1917 (JEL 5751), wing 370 mm.; probable male, 9 November 1915 (JEL 4642), wing 336 mm.; male, December 1924 (JEL 7358), wing 341 mm. In essence, then, the character of ventral streaking may not separate immature *A. g. apache* from more northern Goshawks, but darker upperparts may (except perhaps for the race *A. g. laingi* [Taverner], which should be notably smaller).

Among adults from the Chiricahua Mountains in the Bailey-Law Collection, three are large enough to be called *A. g. apache*. Only one of these is darker than most of 10 more northern specimens, and two are as pale as most of that series: female, 5 February 1917 (JEL 5323), wing 377 mm., upperparts dark; male, 12 November 1916 (JEL 5748), wing 349 mm., upperparts moderately dark; male (somewhat subadult), 20 November 1916 (JEL 5745), wing 347 mm., upperparts pale. These findings do not necessarily indicate that upperpart color is invalid for separating *A. g. apache*, but certainly it does not appear to be entirely

consistent. Another long-winged and dark adult, apparently *A. g. apache*, is a female taken in the Santa Rita Mountains, 2 February 1958 (US 478800), wing 365 mm.

The remaining Chiricahua Goshawk specimens in the Bailey-Law Collection are smaller and generally pale. All are adults and can be assigned to *A. g. atricapillus* (Wilson): male, 10 November 1916 (JEL 5747), wing 317 mm.; male, 15 November 1916 (JEL 5746), wing 322 mm.; female, on or about 20 December 1917 (JEL 5706), wing 358 mm.; female, 24 December 1917 (JEL 5661), wing 352 mm.; female, 9 February 1918 (JEL 5749), wing 349 mm. The first two specimens were taken during the winter of 1916–1917, cited by Phillips et al. (1964) as an invasion year for this form into southern Arizona. The other three were taken in the winter of 1917–1918, which suggests that another invasion occurred in that period. That this race occurs further south is evidenced by an adult probable male taken by I. W. Knobloch in Chihuahua, presumably in the Morjarachi area, on 15 April 1940 (US 365099), wing 324 mm.

Ferruginous Hawk: *Buteo regalis* (Gray). The first Arizona nest recorded by Phillips et al. (1964) was found in 1926 near Prescott, but an earlier one was located by van Rossem in the southeast, where the bird is local and irregular as a breeder. The nest was located in May 1915 at Deep Wells, Cochise County, 15 miles west of the Chiricahua Mountains. The young were taken as follows: one very small nestling on 13 May (JEL 3940); three medium-sized young on 31 May, including one that was kept alive until 5 June (JEL 3937–3939). Also taken there was an adult light phase female on 13 May 1915 (JEL 3935); and opposite Fife Creek, 5 miles west of the Chiricahuas, a light phase adult male and a dark phase (erythristic) female were taken on 31 May 1915 (JEL 3933, 3934). Law (ms) also described and recorded collecting as a skeleton a dark phase adult found dead 4 miles east of Dos Cabezas, Cochise County, on 17 June 1919. Law's field notes contain frequent references to what he thought were these hawks in southern Arizona in the summers of 1919 and 1921, but it appears that in part the records actually refer to Red-tailed Hawks of or approaching the race *Buteo jamaicensis fuertesi* Sutton and Van Tyne. For example, a supposed (ms and label) *B. regalis* nestling (JEL 8163) taken from a nest in a sahuaro 13 miles west of Wickenburg, Maricopa County, on 29 June 1921, proves to be a Red-tail. The error is understandable because of the similarity of these ventrally pale Red-tails and light phase *B. regalis*. (JEL 3937 and 3940 are now in US collection.)

Gray Hawk: *Buteo nitidus* (Latham). J. Eugene Law (1929), in a rather spirited review of a paper on Arizona birds, stated that he had twice seen this species in the Chiricahua Mountains. Examination of his field notes, however, indicates that he was far from positive concerning the identity of his sightings at the time they were recorded. He notes having seen single birds on 22 May and 21 June 1919 that may have been this species, plus possible sightings by his companion, D. D. McLean, on 22 and 27 June 1921. The descriptions in the notes refer to long tail, rounded wings, gray color, and barring; and the birds were all seen at high altitudes, except for one in Pinery Canyon, 5400 feet. Inasmuch as Law seems never to have seen *B. nitidus* elsewhere in the wild, it is likely that his Chiricahua sightings were actually of Goshawks. The latter species breeds in those mountains (Tanner and Hardy, 1958), fits the preceding description, and is more likely to be seen in the habitats in which the observations were made.

Mountain Plover: *Eupoda montana* (Townsend). Phillips et al. (1964) report this species as rare in southeastern Arizona at any time and as wintering eastward only to Phoenix and Florence; however, van Rossem took 14 specimens (JEL 3427-3440) 12 miles south of Dos Cabezas on 23 and 24 February 1915. The possibility exists that these were early spring migrants moving eastward, rather than wintering birds. (JEL 3437-3440 are now in US collection.)

Northern Phalarope: *Lobipes lobatus* (Linnaeus). This species is considered to be rare in southeastern Arizona at any time or anywhere in the state in spring (Phillips et al., 1964). Van Rossem took a male, in breeding plumage, 2 miles north of Light on 27 May 1915 (JEL 3901, which is now in US collection).

California Gull: *Larus californicus* Lawrence. This species is a vagrant in Arizona, except in the lower Colorado Valley where it is a regular migrant (Phillips et al., 1964). J. E. Law (ms) described and identified as this species a gull that he received as a feathered carcass from Frank Hands. Hands found the bird at Chiricahua Seep (exact location unknown to me), Cochise County, on 15 November 1923 and surmised that it had been killed 7 to 10 days before by duck hunters (ms). At that time Law had specimens in his collection that would have allowed him to correctly identify large immature gulls, and his measurements (ms) support the identification: wing 411 mm., tail 159 mm., exposed culmen 50 mm., tarsus 63 mm., bill depth at gonydeal angle about 16 mm. I do not know the ultimate disposal of this bird.

Thick-billed Parrot: *Rhynchopsitta pachyrhyncha* (Swainson). During their invasions of Arizona in 1917–1918, these parrots were reported in the Chiricahua Mountains only as early as July 1917 (Phillips et al., 1964). E. J. Hands took three males and a female (HHB 1078–1082) in these mountains, in Jhus Canyon, which are dated 18 January 1917. However, it is possible these were misdated and were actually taken on 18 January in 1918, rather than 1917. Frank Hands, brother of E. J., wrote Law (ms) extensively on this species, particularly concerning its occurrence in the Chiricahuas in 1917–1918. His earliest record in 1917 was 30 August, when 150 were seen, and his latest in 1918 was on 26 or 27 March, when 15 were seen. During this period Hands thought that the birds occurred only intermittently, with a notable absence from mid-October to mid-December and perhaps in January. Frank Hands also reported shooting one of two parrots seen in these mountains at Cave Creek about 1890 and shooting another, from a flock of about 30, in Pinery Canyon in August or September 1903 or 1904. (JEL 5566, 5665, 5752, 6219, and HHB 1082 are now in US collection; HHB 1081 is in DM collection.)

Elf Owl: *Micrathene whitneyi whitneyi* (Cooper). This species is rare in western Arizona, in the region west of the Big Sandy River, where it has been reported only from near Fort Mohave (the type locality) and at Chloride (Phillips et al., 1964). Jesurun took an adult in that region in the Mohave Mountains, 3200 feet: male, 16 August 1916 (JEL 6232). In a letter to J. E. Law (dated 19 August 1916), he indicated that this was the only Elf Owl observed. Interestingly, the specimen is in active molt, with new and sheathed feathers on the forehead and crown and the tail partially regrown; the inner six primaries are new, the seventh is half-grown, and the outer three are old. Ligon (1968) reported that the Elf Owl begins the annual molt in early September; but, as this specimen shows, it may begin in mid-August. This appears to be only the second wild-taken specimen in the midst of postnuptial molt (*vide* Ligon, 1968). (Specimen is now in US collection.)

Common Nighthawk: *Chordeiles minor* (Forster). Although summer specimens are known from the Chiricahua Mountains, the status of this species in that range appears unclear, and the species is not definitely known to breed there (Phillips et al., 1964). Additional data include records of J. E. Law (ms) in Pinery Canyon in the summers of 1919 and 1921, as well as a specimen of *C. m. henryi* Cassin: adult male, 21 June 1921 (JEL 6939), testes 5.5 x 7 mm. Several of Law's observations were of "booming" birds, as were records obtained in Whitewater Can-

yon on 7 July 1919 and Rucker Canyon on 8 July 1919. In addition, 12 specimens were taken by van Rossem in Bonita Canyon in the period from 26 May to 5 June 1915, although these may all be migrants. All but three I refer to *C. m. henryi*, the exceptions being a dark male, 27 May (JEL 3961), that is near *C. m. hesperis* Grinnell; and two pale males, 27 and 28 May (JEL 3962, 3966), that may prove to be *C. m. howelli* Oberholser when proper comparisons can be made. More recently, Ligon and Balda (1968) report seeing the species in the range on 18 July 1965.

Calliope Hummingbird: *Stellula calliope* (Gould). This species was not mapped by Phillips et al. (1964) as occurring in the Chiricahua Mountains, but J. E. Law (ms) saw three and took an immature male specimen in Barfoot Park, 8200 feet, on 24 August 1919 (JEL 6435). More recently, Ligon and Balda (1968) list two sight records from these mountains.

Rivoli's Hummingbird: *Eugenes fulgens aureoviridis* van Rossem. Summer habitats of this species in Arizona are reported by Phillips et al. (1964) as being in the mixed Upper Sonoran and Transition Zones, with males sometimes ranging up to the lower edge of fir forest. Observations by J. E. Law (ms), with D. D. McLean, in the Chiricahua Mountains in 1921 indicate that a mixture of Transition and Canadian habitats also may be used. They found the species mainly above 8000 feet in and near arboreal habitats dominated by fir, aspen, pines, and live and deciduous oaks, with feeding done mainly at flowering locust and agave. The only record in dense fir forest was of a female taken at a honeysuckle on Fly Peak, 9000 feet: adult, 1 July 1921 (JEL 6942). In contrast to Law's failure (ms) to find the species at lower elevations (5500 to 7000 feet in Pinery Canyon in 1919 and 1921), Ligon and Balda (1968), in their recent studies in these mountains, found it regularly in Cave Creek Canyon and only occasionally up to the lower edge of pine forest. (JEL 6942 is now in US collection.)

Gilded Flicker: *Colaptes chrysoides mearnsi* Ridgway. This form is not mapped as occurring west of the Big Sandy River in Mohave County, except formerly at Fort Mohave (Phillips et al., 1964), but in 1916 Jesurun took three adults in the Mohave Mountains, 3200 to 4500 feet: male, 13 August (JEL 6236), molting; male, 2 September (JEL 6234), molt nearly complete; female, 20 September (JEL 6235), molt nearly complete. The specimens suggest that this flicker is or was resident in these mountains. Also taken there by Jesurun was a fresh-plumaged *C. auratus collaris* Vigors: adult female, 14 September 1916 (JEL 6232);

this is presumed to be an early postbreeding migrant from farther north, although slightly earlier than first arrivals reported in southern Arizona by Phillips et al. (1964).

Yellow-bellied Sapsucker: *Sphyrapicus varius* (Linnaeus). Intergrades between the red-headed forms of this species and more easterly populations are rare enough in Arizona to warrant reporting three others taken by van Rossem in Pinery Canyon, 6000 feet, all in the autumn of 1914: immature male, 24 October (JEL 2434); immature female, 29 October (JEL 2439); adult male, 8 November (JEL 2441). Although I am unable to determine precisely the ancestry of these specimens, their size, the brightness of the red coloration, and the amount of light spotting suggest that they are *S. v. nuchalis* Baird x *S. v. ruber* (Gmelin) (JEL 2439 may be *S. v. nuchalis* x *S. v. daggetti* Grinnell). All are generally similar to *S. v. nuchalis*, except for being more extensively red on the head and breast. JEL 2439 lacks black on the nape and breast, whereas in the other two specimens the black areas are retained but overlaid with red. (Specimens are now in US collection.)

Hairy Woodpecker: *Dendrocopos villosus icastus* (Oberholser). Phillips et al. (1964) consider this species as resident in coniferous forests in Arizona (although formerly ranging lower in winter). In 1919 J. E. Law found the species present in summer in oak, pine-oak, and riparian woodlands of Pinery Canyon, 6000 to 6200 feet; he took two specimens: adult male, 13 June (JEL 6418); immature female, 27 June (JEL 6422). Van Rossem took one even lower in the canyon, at 5800 feet: adult male, 26 October 1914 (JEL 2418). More recently, Ligon and Balda (1968) found two nests in riparian woodland along Cave Creek at about 5400 feet.

Downy Woodpecker: *Dendrocopos pubescens* (Linnaeus). This species is rare in southeastern Arizona and has not been previously reported in the Chiricahua Mountains (Phillips et al., 1964). J. E. Law received the carcass of an adult female shot by Frank Hands in Pinery Canyon, 5500 feet, on 10 April 1928, from which he saved feathers (JEL 9646) and apparently the skeleton (ms). I have not seen the latter, but the feathers are definitely this species, probably the race *D. p. leucurus* (Hartlaub). Measurements given by Law (ms) are also confirmatory: wing 99.7 mm., tail 59.8 mm., exposed culmen 13.7, tarsus 17.2 mm.

Western Kingbird: *Tyrannus verticalis* Say. Phillips et al. (1964) report that the first spring migrants appear in Arizona in late March, occurring north and east to Phoenix and Tucson. That the species also occurs farther east at that time is indicated by a male taken by van

Rossem in Bonita Canyon, Chiricahua Mountains, on 29 March 1915 (JEL 3494); another was taken there on 2 April 1915 (JEL 3495). Those authors also state that this species is local in the breeding season in parts of southernmost Arizona and absent in Guadalupe Canyon in extreme southeastern Cochise County. I have several records of the species in the latter area in summer, including two pair seen on 20 June 1959 (along with *T. vociferans* and *T. crassirostris* Swainson).

Cassin's Kingbird: *Tyrannus vociferans vociferans* Swainson. Specimens representing early arrival dates in southeastern Arizona are three males taken by van Rossem in Bonita Canyon, Chiricahua Mountains, on 29 March 1915 (JEL 3496-3498).

Buff-breasted Flycatcher: *Empidonax fulvifrons pygmaeus* Coues. This species was formerly more widespread in Arizona (Phillips et al., 1964) and in New Mexico (Hubbard, 1970) but is now very local and rare in the Southwest. In Arizona and in Mexico the habitat is reported to be open riparian woodland and pine forest, with a bare, weedy, or grassy understory (Phillips et al., 1964). These authors suggest that the decline of the species in Arizona is due to an increase in brush and young trees, resulting from fire protection, which has eliminated much of the openness. Phillips (1968) reiterates this theory but admits that it does not explain the species' present absence from such seemingly suitable higher elevation localities as Rustler and Barfoot Parks in the Chiricahua Mountains, where he implies that the species has not been recorded. This species, in fact, formerly did occur in these parks and almost certainly bred there as well, as is evidenced by Law's specimens and observations (ms).

In Barfoot Park, Law saw at least nine birds on 14 August 1919 and took two grown juveniles (JEL 6467, 6468). In 1921 he saw four birds on 6 July and took two stub-tailed juveniles (JEL 6960, 6961), both being attended by adults and almost certainly hatched nearby. In Rustler Park he noted two birds in late April 1913 that were possibly the same as two specimens (JEL 899, 901) taken on 25 April 1913 and labeled as Paradise, 7800 feet. Law also reported that D. D. McLean took a specimen in Rustler Park on 9 July 1921, a fact borne out by recent correspondence from McLean (Laura Bailey, pers. comm.). The implication from Law's notes is that the species was fairly common in the above areas and was seen with regularity. (JEL 6467 and 6961 are now in US collection.)

Interestingly, Law noted a propensity by the birds for foraging near the ground in dense vegetation, such as bracken fern, even to the point

of being entirely hidden in the growth at times. This willingness to penetrate at least certain types of dense growth and the former occurrence of species in seemingly still suitable areas argue for caution in more than tentative acceptance of a simple explanation for the species' decline in the Southwest.

Vermilion Flycatcher: *Pyrocephalus rubinus flammeus* van Rossem. This species is not mapped as summering on the west side of the Chiricahua Mountains by Phillips et al. (1964), but J. E. Law (ms) recorded it locally in Pinery Canyon in the summers of 1919 and 1921. The species was seen mainly about the ranches of Rhoda Riggs and T. B. Startes, and an adult female was taken on 28 June 1919 (JEL 7401). In 1915, van Rossem took 26 specimens in Bonita Canyon, 5000 feet, also on the west side of the Chiricahuas, but most of these may have been migrants. In all, 16 males (nine adult and seven subadult) were taken there from 2 March to 5 May, along with 10 females from 26 March to 22 April.

Barn Swallow: *Hirundo rustica erythrogaster* Boddaert. Additional breeding data of this species in southeastern Arizona are of interest, as it is local and somewhat irregular there (Phillips et al., 1964). J. E. Law (ms) recorded this species breeding on the depot building of the Southern Pacific Railroad in Willcox, where he found an active nest in 1919 and two nests on 15–17 June 1921. The species also breeds at present in Cave Creek Canyon, Chiricahua Mountains (Ligon and Balda, 1968), but Law's only summer record in that range was of a solitary adult seen over Rustler Park, 8400 feet, on 5 July 1921.

Incidentally, Phillips et al. (1964) contend that this swallow migrates at night in Arizona, based on the finding of a broken-winged bird fluttering under a tree on the San Francisco Peaks. The assumption is made that the bird collided with the tree in the dark, but as it was not encountered until midmorning, one cannot rule out other possibilities, e.g., collision while feeding, fighting, or fleeing a raptor in broad daylight.

Purple Martin: *Progne subis* (Linnaeus). Martins breeding in Arizona from the Mogollon Plateau and the Chiricahua Mountains northward have been assigned by Behle (1968) to his recently described race, *P. s. arboricola* (type locality: Payson Lakes, Utah County, Utah). This new taxon is said to differ from *P. s. subis* and *P. s. hesperia* Brewster in being larger in both sexes, plus paler on the forehead and whiter below than females of *P. s. subis*. In Table 2, wing lengths of 11 breeding martins from the Chiricahua Mountains are compared to those given by Behle (1968).

**Table 2: Wing Lengths of
Breeding Martins (*Progne subis* ssp.)**

FORM OR SAMPLE	ADULT MALES			ADULT FEMALES		
	<i>N</i>	Mean \pm 1 SD	Range	<i>N</i>	Mean \pm 1 SD	Range
<i>P. s. arboricola</i> ¹	31	150.1 \pm 2.37	146.0–155.7	17	145.6 \pm 3.07	141.1–154.1
<i>P. s. subis</i> ¹	49	144.2 \pm 3.35	134.3–151.9	34	141.0 \pm 2.96	136.1–146.4
<i>P. s. hesperia</i> ¹	22	139.5 \pm 1.69	132.0–146.5	14	136.4 \pm 2.49	132.6–140.2
Chiricahua Mts. ²	6	147.5	144.0–153.0	5	141.8	139.0–144.0

¹ Measurements from Behle (1968)

² SD not calculated because of small samples

From these data it is apparent that breeding males from the Chiricahuas are actually intermediate between *P. s. subis* and *P. s. arboricola* and that females are very close to *P. s. subis*. Admittedly, the sample sizes are small, but they are a better basis for evaluating this breeding population than Behle (1968) had, because he measured no birds from the Chiricahua Mountains. On the basis of measurements, it appears that he was premature in assigning the breeding birds of these mountains to his newly described race. The same conclusion also applies when color characters are analyzed; for of seven females examined by me, three are indistinguishable from *P. s. subis*, three fit *P. s. arboricola*, and one is intermediate. The first three have dark foreheads and mainly grayish underparts, with the white of the belly not extensive. The second three have pale foreheads and more extensively white bellies, and the seventh specimen lies between the two groups in both characters. Based on these data, breeding birds from the Chiricahuas should be called *P. s. subis* x *P. s. arboricola*, should the latter be recognized.

The inclusion by Behle (1968) of the Mogollon Plateau of Arizona in the range of *P. s. arboricola* also requires study, as his sample size there is very small. In fact, the range of the proposed form is not well researched outside of Utah, and the identity of the breeding birds of the Pacific Coast (regarded as *P. s. subis* by most workers) is essentially ignored by Behle. Obviously, a broader review of the available specimen material is necessary, not only to define the range of *P. s. arboricola* but also to establish the validity of the taxon.

Scrub Jay: *Aphelocoma coerulescens nevadae* Pitelka. Additional records from far western Arizona, where this species is apparently only a nonbreeding visitor, are of two specimens taken in 1916 by M.

Jesurun in the Mohave Mountains, 4500 feet: female, 7 September (JEL 6253); male, 20 September (JEL 6252). These are pale and both seem to be adults.

Clark's Nutcracker: *Nucifraga columbiana* (Wilson). Additions to the chronicle of incursions of this species in Arizona include the following observations from the Chiricahua Mountains, supplied to J. E. Law (ms) by Frank Hands. In 1919, up to eight birds at a time were present in Pinery Canyon from 18 September through 8 November. In 1921-1922, single birds were noted at intervals in the same canyon through the winter. Both of these periods represent years unreported by Phillips et al. (1964). These authors also refer to a specimen taken by H. H. Kimball in April 1895 in the Huachuca Mountains as apparently being a postbreeding migrant. Such a specimen also exists in the Bailey-Law collection, an adult female taken on 24 April 1895 (JEL 653). The supposition that it is postbreeding is supported by the fact that the specimen is in the early stages of the postnuptial molt. (Specimen is now in US collection.)

Plain Titmouse: *Parus inornatus plumbescens* (Grinnell). Phillips et al. (1964) indicate that this species is very local in the Chiricahua Mountains, although recently Ligon and Balda (1968) report it to be fairly common in more xeric areas of the range. This possibly indicates a change in status there. J. E. Law (ms) never found the species in these mountains during his field work in 1913, 1919, and 1921, although in 1915 van Rossem took two in Pine Canyon, 5000 feet, on the west side of the range: male, 23 April (JEL 4296); female, 3 May (JEL 4297). (JEL 4297 is now in US collection.)

Common Bushtit: *Psaltirparus minimus plumbeus* (Baird). Phillips et al. (1964) list only one record from the Mohave Mountains, to which can be added another taken by M. Jesurun: adult female, 5 September 1916 (JEL 6331). The specimen is in the terminal stages of the postnuptial molt.

Red-breasted Nuthatch: *Sitta canadensis* Linnaeus. An exceptionally early autumn migrant and unusual occurrence is a specimen taken in the Colorado Valley, 400 feet, Mohave County, by M. Jesurun: female, 26 August 1916 (JEL 6330). No specific locality is given in the valley, but it was probably somewhere west of the Mohave Mountains.

Dipper: *Cinclus mexicanus unicolor* Bonaparte. To the few records from the Chiricahua Mountains may be added two unsexed specimens taken by E. J. Hands: Pinery Canyon, 28 November 1914 (JEL 3387); Cave Creek, 5500 feet, 18 December 1920 (JEL 6602). (Specimens are now in US collection.)

Bewick's Wren: *Thryomanes bewickii eremophilus* Oberholser. A specimen taken by M. Jesurun in the Mohave Mountains, 3200 feet, where the species is not known to breed, is slightly earlier than the earliest record of an autumn migrant given by Phillips et al. (1964): adult female, 14 September 1916 (JEL 6329). The plumage is fresh.

Sage Thrasher: *Oreoscoptes montanus* (Townsend). Phillips et al. (1964) consider this species as casual or irregular in winter in southeastern Arizona, east of the San Pedro River. Additional records from the area are the following taken by A. J. van Rossem in 1915: female, 3 miles southeast of Dos Cabezas, 4700 feet, 18 January 1915 (JEL 2788); male, Bonita Canyon, 5000 feet, Chiricahua Mountains, 7 February 1915 (JEL 3761). Possibly also wintering in this range is the following from Pinery Canyon, 5400 feet: female, 20 November 1914 (JEL 2789). In addition, a very early autumn migrant was taken by M. Jesurun in the Mohave Mountains, 3200 feet: female, 22 August 1916 (JEL 6314). Another, more recent specimen (DM 1421) was taken 3 miles east of Portal, Cochise County, on 12 August 1960 by John E. duPont. The bird is a worn female and is almost certainly an early autumn migrant. Both of these August dates are earlier than the earliest sub-Mogollon Plateau record listed by Phillips et al. (1964); i.e., 29 August 1884.

Western Bluebird: *Sialia mexicana bairdi* (Ridgway). Phillips et al. (1964) indicate that this species is confined to higher elevations in summer in southern Arizona, but J. E. Law (ms) found it as low as 5650 feet in Pinery Canyon, Chiricahua Mountains, in live oak and adjacent riparian woodlands. On 5 May 1919 he located a pair in the vicinity of the Frank Hands homestead, and on the following day he saw them carrying nesting material into a cavity in a sycamore. Later, on 29 June, Witmer Stone took a grown juvenile in the vicinity (PA 78826). In the same area, Law found one or two pairs present during his stay from 3 to 25 June 1921, and he also noted that Hands found a pair nesting there in 1918. The juvenile is identifiable as this species in part by its grayish blue throat, rather than whitish as in *S. sialis*.

Law did not find *S. sialis* (Linnaeus) in the Chiricahuas during his field work in 1913, 1919, and 1921, although he made no special search for it and noted (ms) that it would have been easily overlooked or mistaken for *S. mexicana*. *S. sialis* is now known to breed in these mountains (Phillips et al., 1964).

Gray Vireo: *Vireo vicinior* Coues. While mapping this vireo as breeding in the Santa Catalina Mountains, Phillips et al. (1964) report that they have never personally encountered the species there but would

expect it at the northern base of the range. In 1963 I found two individuals in Molino Basin on the south slope of these mountains and took one as a skeletal specimen: adult male, 25 June (UM), testes 3.5 x 4 mm., weight 11.5 grams. The specimen was singing when shot and had been chasing or courting the other bird.

In the Chiricahua Mountains, van Rossem took four males and one female on 20 April 1915 (JEL 4225-4228), which he noted to be the first arrivals detected by him. The only arrival date in a breeding area given by Phillips et al. (1964) is 1 April 1885, in the Santa Catalina Mountains, but that may be exceptionally early. Interestingly, on 13 November 1964, Gale Monson (pers. comm.) saw one in the Chiricahua Mountains, in lower Cave Creek Canyon, which may have been wintering. If so, this is considerably east of the winter range as presently known in Arizona (Phillips et al., 1964).

Solitary Vireo: *Vireo solitarius cassinii* Xantus. Law took an adult female (JEL 9604) on the San Pedro River on 18 March 1928, a date which precedes by 6 days the earliest spring record of a migrant listed by Phillips et al. (1964). The exact locality is the 111 Ranch, 8 miles northwest of Mammoth, Pinal County. The specimen was supposedly skeletonized (ms), but I have seen only the spread wing that was salvaged (approximate length 73 mm.). Law and A. Brooks saw two or three of these vireos at the 111 Ranch on that date and apparently one on the preceding day (ms). These birds may also have wintered in the area, as the species is known to do so in similar habitats to the west (Phillips et al., 1964).

Lucy's Warbler: *Vermivora luciae* (Cooper). That there have been range expansions of this species in the Southwest in historic times is recognized (Phillips et al., 1964; Phillips, 1968; Hubbard, 1970), but some details of the chronology of events are still lacking. The earliest specific date given by Phillips et al. (1964) in the Chiricahua Mountain area is 1947, but van Rossem took five specimens there in Bonita Canyon, 5000 feet, in 1915: pair, 20 April; male, 26 April; two males, 5 June (JEL 4224-4225, 4229-4231). In his work in Pinery Canyon in 1919 and 1921, Law did not find the species, but he reported (ms) that Witmer Stone found a family group in Rucker Canyon on 9 July 1921; one of these, an adult male, was taken as a specimen (PA 78778). Thus, it seems likely that this warbler was already a local summer resident in the Chiricahua Mountain region by 1915. The species is omitted from Guadalupe Canyon on the map in Phillips et al. (1964), but the bird is a common breeder there. (JEL 4229 and 4325 are now in US collection.)

Western Meadowlark: *Sturnella neglecta neglecta* Audubon. This species is only a migrant and wintering bird in Arizona south of the Gila Valley and east of Tucson, except for one breeding record (Phillips et al., 1964). During several months of continuous collecting from the autumn of 1914 through the spring of 1915, van Rossem took a series of this species in the Chiricahua Mountains area, which elucidates the period of its occurrence there during that span. A total of 20 specimens was taken, all on the west side of the range in Pinery and Bonita Canyons, except for two that were collected somewhat farther west. The earliest are two specimens taken on 25 October 1914 and the latest is one on 3 April 1915; most specimens were taken in October (five) and March (five), with a total of only six in the colder months of January and February. During the same period, 19 *S. magna lilianae* Oberholser were also collected, including four in the colder months of December and February.

Red-winged Blackbird: *Agelaius phoeniceus fortis* Ridgway. No wintering specimens are shown from the Chiricahua Mountains (Phillips et al., 1964), where van Rossem took 31 females and two males in the period 17 January through 28 February 1915. Most are from Bonita Canyon, 5000 feet, but a few are from Picket and Pinery Canyons, also 5000 feet. A female taken in Bonita Canyon on 9 February (JEL 3554) is somewhat more extensively dark on the belly than the remainder of the series, and its subspecific identity is unclear.

Hooded Oriole: *Icterus cucullatus nelsoni* Ridgway. This species is not mapped as summering in the Chiricahua Mountains (Phillips et al., 1964), but J. E. Law found it (ms) to be fairly common in Pinery Canyon, up to 5500 feet, in the period 3–13 June 1921. In addition, van Rossem took an unsexed, short-tailed juvenile (JEL 4395) in Bonita Canyon, 5000 feet, on 5 June 1915; earliest spring specimens taken by him in 1915 were also from Bonita Canyon: male, 3 April (JEL 4117); female, 5 April (JEL 4118). More recently, Ligon and Balda (1968) have found this species summering in these mountains.

Bullock's Oriole: *Icterus galbula bullockii* (Swainson). This species is not shown summering in the Chiricahua Mountains (Phillips et al., 1964), but J. E. Law found it (ms), albeit rarely, in Pinery Canyon in June 1921. He took an adult male in the canyon, 5500 feet, on 20 June (JEL 6966), testes 6 mm. in diameter. More recently, Ligon and Balda (1968) found it nesting in Cave Creek Canyon.

Brown-headed Cowbird: *Molothrus ater obscurus* (Gmelin). This species is not shown summering in the Chiricahua Mountains (Phillips et al., 1964), but J. E. Law found it (ms) present in Pinery Can-

yon in June 1921, 5500 feet. He took two adult males there: 17 June (JEL 6963), testes 6.0 x 4.5 mm.; 23 June (JEL 6964), testes 10 mm. Van Rossem also took an adult male in Bonita Canyon, 5000 feet, on 5 June 1915 (JEL 4314). More recently, Ligon and Balda (1968) have found the species breeding in these mountains. This cowbird is also common in summer in Guadalupe Canyon (not mapped by Phillips et al., 1964), and records there include an instance of parasitism of Bell's Vireo in the New Mexico section of the canyon in June 1959.

Blue Grosbeak: *Guiraca caerulea interfusa* Dwight and Griscom. This species is not shown summering in the Chiricahua Mountains by Phillips et al. (1964), but J. E. Law found it (ms) present in small numbers in lower Pinery Canyon (about 4500 feet) from July through September 1919. He also took an adult male there on 18 June 1921 (JEL 6991), testes 6 x 8 mm. More recently, Ligon and Balda (1968) found it uncommonly in mesquite near Portal.

Evening Grosbeak: *Hesperiphona vespertina montana* Ridgway. Additional summer records and a nest of this erratic (as to place) breeder were obtained by J. E. Law and D. D. McLean in the Chiricahua Mountains in 1921 (ms). In June and July they found the species fairly common in Rustler Park, 8400 feet, and vicinity; and on 28 June a nest containing young was found in a pine by McLean. The three stub-tailed juveniles were collected, two of which were saved as skins (JEL 6968, 6969). Additional specimens taken in the period are of three adult males, two adult females, and a grown juvenal female (JEL 6967, 6971-6975). (JEL 6968, 6972, 6974, and 6975 are now in US collection; JEL 6967 is in DM collection.)

Pine Siskin: *Spinus pinus* (Wilson). This species occurs in summer in the Chiricahua Mountains, but it is not known to breed (Phillips et al., 1964). Suggestive of breeding are three grown juveniles (JEL 6501-6503) taken by J. E. Law in Pinery Canyon, 5650 to 5750 feet, in the period 6 to 8 August 1919: male, wing 74.5 mm.; two females, wings 72.5 and 73.2 mm. Although the wings are moderately long and thus approach *S. p. macropterus* (Bonaparte), they can be duplicated by extremes of more northern *S. p. pinus*. Of three specimens taken by van Rossem in Pinery Canyon in the period 24 to 26 December 1914, two are large enough to be *S. p. macropterus*: male (JEL 2966), wing 76.0 mm.; female (JEL 2968), wing 75.0 mm. The other specimen is a female with the wing 72.5 mm., which is intermediate between this and the nominate race.

American Goldfinch: *Spinus tristis* (Linnaeus). According to Phillips et al. (1964), this species has not been found in the Chiricahua Mountains, but van Rossem took four specimens (JEL 2960-2962,

4123) there in Bonita Canyon 5000 to 6000 feet: male, 21 November 1914; male, 1 December 1914; female, 25 January 1915; male, 13 April 1915. All are *S. t. pallidus* Mearns except the first (JEL 2960), which is referable to *S. t. salicamans* Grinnell on the basis of its short wing (73 mm.), darkness, and only moderate amounts of white in the flight feathers. (JEL 2960 is now in US collection.)

Red Crossbill: *Loxia curvirostra stricklandi* Ridgway. In view of the irregularity of reports of this species in the state, observations by J. E. Law (ms) in the Chiricahua Mountains are of interest. In 1919 Law found the species fairly common from June to August, with observations confined to higher elevations, mainly in and near Barfoot Park. Twelve specimens (JEL 6486-6497) were taken on 19 June on the north slope of Ida's Peak, 8000 feet, and consist of two adult males and 10 juveniles or immatures. The adults are just beginning molt, two immatures have nearly finished postjuvénal molt, and the eight juveniles show none to heavy molt. An immature male (JEL 6485) taken at Barfoot Park, 8200 feet, on 14 August has completed the molt. In 1921, during their stay from 25 June through 11 July, Law and D. D. McLean found the species to be fairly common in Barfoot Park and occasional in Rustler Park. Three juveniles (JEL 6976-6978) showing slight to nearly complete molt were taken in the former locality on 27 June. All of the specimens are long winged and heavy billed—characters of *L. c. stricklandi*. (JEL 6487, 6489, 6491, 6494, and 6496 are now in DM collection.)

Green-tailed Towhee: *Pipilo chlorurus* (Audubon). Additional records of what Phillips et al. (1964) regard as a generally scarce resident in most winters in the southeast are two specimens (JEL 3204, 3205) taken by van Rossem in Bonita Canyon, 5000 feet, Chiricahua Mountains, on 24 January 1915. Three other specimens (JEL 3734-3736) were taken at the same place on 10 and 20 March 1915, and these are either very early migrants or wintering birds.

Rufous-sided Towhee: *Pipilo erythrophthalmus montanus* Swarth. This species is regarded by Phillips et al. (1964) as a rather rare transient in the Colorado Valley area. An additional record from the area is a female (JEL 6269) collected in the Mohave Mountains, 4500 feet, by M. Jesurun on 20 September 1916. This date precedes by 2 days the earliest record listed by these authors for autumn birds in nonbreeding areas; the record also seems to be the first of this species from these mountains. The specimen is indistinguishable from a series of *P. e. montanus* from the Chiricahua Mountains, with notable features being heavy dorsal spotting and grayish black head and upperparts.

Lark Bunting: *Calamospiza melanocorys* Stejneger. This species is not shown wintering in the Chiricahua Mountains by Phillips et al. (1964), where van Rossem took three males (JEL 3229–3231) in Bonita Canyon, 5000 feet, on 24 January 1915. He took a total of 52 specimens in the area between these mountains and Willcox during his stay in 1914–1915, the earliest on 29 October 1914 and the latest on 4 May 1915.

Grasshopper Sparrow: *Ammodramus savannarum* (Gmelin). Phillips et al. (1964) record only one summer occurrence east of the San Pedro River, to which may be added an adult male (JEL 6980) taken by Law near Dos Cabezas on 23 June 1921. The exact locality is 3 miles north of the Riggs Home Ranch, where the apparently solitary bird was found in a grassy swale (ms). The very worn nature of the plumage prevents subspecific determination, but it is probably *A. s. ammolagus* Oberholser. (Specimen is now in US collection.)

Baird's Sparrow: *Ammodramus bairdii* (Audubon). Although there is little question that the numbers and possibly the range of this species have declined dramatically in historic times in the Southwest, the timing of the decline is subject to clarification. In Arizona, Phillips et al. (1964) place the initial major decrease about 1880, after which the species is known to have wintered mainly in the vicinity of the Chiricahua and Huachuca Mountains. In the Chiricahua region those authors regard it to have been decidedly uncommon between 1878 and 1920, yet van Rossem took 26 specimens in Pinery and Bonita Canyons from 5 December 1914 to 18 April 1915. This number of specimens of an elusive sparrow, which was far from the sole object of van Rossem's collecting, suggests that the species was more common then than previously suspected, at least in 1914–1915. (JEL 3014, 3018, 3657, 3659, 4134, and 4141 are now in US collection; JEL 3015, 3655, 4135, and 4140 are in DM collection.)

Vesper Sparrow: *Poocetes gramineus confinis* Baird. This species is not reported by Phillips et al. (1964) as wintering in the Chiricahua Mountains or anywhere in the Upper Sonoran Zone. Van Rossem took seven specimens (JEL 3001–3004, 3006, 3535, 3536) in Pinery and Bonita Canyons in the period 4 December 1914 through 16 February 1915. Also taken farther west were single specimens, 12 miles southeast of Willcox on 9 December 1914 (JEL 3005) and at Light on 9 January 1915 (JEL 3007). (JEL 3003 is now in DM collection.)

Lark Sparrow: *Chondestes grammacus strigatus* Swainson. This species is not mapped as breeding in the Chiricahua Mountains by Phillips et al. (1964), but information obtained by J. E. Law shows that it has

bred there. During June 1921, Law (ms) found one or two pairs in Pinery Canyon, 5500 feet, and he took an adult male there on 13 June (JEL 1921), testes 8.5 x 10 mm. On 22 June, Frank Hands (ms) reported seeing a pair feeding a young bird out of the nest a few days previously, and in past years he found a nest with four eggs near his home in Pinery Canyon. More recently, Ligon and Balda (1968) have reported this species in summer in these mountains, with several nests being found by them.

Botteri's Sparrow: *Aimophila botterii arizonae* (Ridgway). The first published proof of this species' breeding in Arizona was recently obtained and reported by Ohmart (1968), but prior evidence exists in the form of a juvenile taken by W. W. Price and R. L. Wilbur: female, 22 August 1893, Fairbank, Cochise County (JEL 2742). The bird is obviously too young to have flown far and can be assumed to have been hatched locally. Taken at the same locality and date is an adult male, while on 18 August two adult males and an adult female (JEL 2737-2740) were collected, all in worn plumage. An additional specimen obtained by these collectors is an adult male (JEL 2743), taken on 19 June 1893 at Fort Lowell, Pima County. (Specimens are now in US collection.)

Cassin's Sparrow: *Aimophila cassinii* (Woodhouse). Additional winter records of this easily overlooked species are five specimens (JEL 3161-3163, 3706, 3707) taken by van Rossem in Bonita and Pinery Canyons, 5000 feet, Chiricahua Mountains, in the period 4 December 1914 through 22 February 1915. Also of interest is a worn adult female (HHB 2004) taken by H. H. Kimball at Sonoita, Santa Cruz County, on 24 June 1923; this may be the earliest June specimen record from the state. (HHB 2004 is now in US collection.)

Junco: (*Junco* spp.). Some 160 juncos were taken over the period 18 October 1914 to 30 April 1915 in and around Pinery Canyon, 5600 to 6300 feet, in the Chiricahua Mountains. This sampling provides some assessment of the forms occurring there during that period. The most numerous form, in terms of specimens collected, is *Junco hyemalis caniceps* (Woodhouse), of which 71 were taken from 24 October through 23 March (late was a female taken there on 30 April). Next is *J. h. montanus* Ridgway, with 45 taken from 20 October through 21 March, and then *J. h. mearnsi* Ridgway, with 17 from 18 October through 1 April. From 24 October through 30 January, 17 specimens were also taken of *J. phaeonotus palliatus* Ridgway, a species which bred as low as 6000 feet in that canyon in 1919 (Law, ms). Among the rarer forms are single males of *J. h. dorsalis* Henry (JEL 3684), 16 January 1915,

and *J. h. hyemalis* (Linnaeus) (JEL 3041), 5 December 1915. The identifications of most of these specimens were verified by the late A. H. Miller. (JEL 3684 is now in US collection.)

Chipping Sparrow: *Spizella passerina arizonae* Coues. This species is not mapped as wintering in the Chiricahua Mountains by Phillips et al. (1964), where van Rossem took five specimens (JEL 3026–3028, 3032, 3671) in Pinery and Bonita Canyons, 5000 feet, in the period 4 December 1914 through 16 February 1915. He also took three (JEL 3029–3031) 5 miles north of Light on 9 January 1915. This species is recorded by Phillips et al. (1964) as a local breeder in Upper Sonoran woodland of the Chiricahuas, but in summer 1921 J. E. Law (ms) found it ranging commonly from 5500 feet in Pinery Canyon to 9000 feet in the Transition Zone. In Rustler Park, 8000 feet, Law and D. D. McLean found a nest containing an egg on 7 July 1921 and another with two eggs on 11 July. Breeding at higher elevations in those mountains may be only a former occurrence, as the recent paper of Ligon and Balda (1968) does not record the species above pine-oak woodland. (JEL 3671 is now in DM collection.)

Brewer's Sparrow: *Spizella breweri breweri* Cassin. This sparrow is not mapped as wintering in the southeast by Phillips et al. (1964) east of the San Pedro and south of the Gila Rivers. However, van Rossem took a total of eight specimens (JEL 3033–3040) 12 miles southeast of Willcox on 8 December 1914, 3 miles east of Dos Cabezas on 18 January 1915, and at Light on 9 January 1915.

Fox Sparrow: *Passerella iliaca zaboria* Oberholser. Not listed by Phillips et al. (1964) is a specimen of this rare-in-Arizona race taken by van Rossem in Pinery Canyon, 6000 feet, in the Chiricahua Mountains: female, 6 November 1914 (JEL 2524). The specimen is recorded by Swarth (1920) as the nominate race, but at that time *P. i. zaboria* had not been described. Van Rossem also took a single specimen of *P. i. townsendi* (Audubon) (JEL 3178), as reported by Swarth (1920), which remains unique for Arizona (Phillips et al., 1964). (Specimens are now in US collection.)

McCown's Longspur: *Calcarius mccownii* (Lawrence). Phillips et al. (1964) report a marked decline in numbers and range of this species in Arizona and indicate an absence of records between 1902 and 1922 (between 1902 and 1939 in the southeast). However, van Rossem took 11 specimens (JEL 2991–2996, 2998–3000, 3368, 3369) on 8 and 9 December 1914 at localities variously 10 to 15 miles south and southeast of Willcox and of Dos Cabezas. (JEL 2991, 2993, 3000, and 3368 are now in US collection; JEL 2994 and 2997 are in DM collection.)

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